

What is claimed is:

1. A xenon lamp which comprising:
an arc tube provided with a side tube portion at each end;
xenon gas within the arc tube;
an anode and an opposed cathode located within the arc tube spaced a predetermined distance from each other; and
an electrode rod connected to a back end of the anode and extending to an adjacent side tube portion and another electrode rod connected to a back end of the cathode and extending to an adjacent side tube portion,

wherein the anode comprises:

- a flattened or rounded anode tip;
- a rounded or flattened back end;
- a portion with a gradually increasing diameter in which the gradual increasing diameter gradually increases in diameter from the anode tip toward the back end;
- a portion with a gradually decreasing diameter extending toward the back end of the anode in which the gradually decreasing diameter gradually decreases in the direction toward the back end and a length, in an axial direction of the portion with a gradually decreasing diameter, which is greater than the length in the axial direction of the portion with an increasing diameter; and
- a portion with a maximum outside diameter which is located in a transition area between the portion with the increasing diameter and the portion with a decreasing diameter, and

wherein the transition area between the portion with the increasing diameter and the portion with the decreasing diameter is of a continuous profile.

2. The xenon lamp as claimed in claim 1, wherein the relationship $L > D$ is satisfied when L (mm) is the length in the axial direction from the anode tip to the back end of the anode and D (mm) is the diameter of the portion with the maximum outside diameter.

3. The xenon lamp as claimed in claim 1, wherein the diameter of the portion with the increasing diameter increases substantially linearly, the diameter of the portion with a decreasing diameter decreases substantially linearly, and the surface of the anode in the transition area between the portion with the increasing diameter and the portion with the decreasing diameter is formed as a substantially arc-shaped, rotationally curved surface.

4. The xenon lamp as claimed in claim 1, wherein the portion with the increasing diameter and the portion with the decreasing diameter are each formed with a substantially arc-shaped, rotationally curved surface, and

wherein the relationship $R3 < R4$ is satisfied when $R3$ is the radius of curvature of the curved surface of the portion with the increasing diameter and $R4$ is the radius of curvature of the curved surface of the portion with the decreasing diameter.

5. The xenon lamp as claimed in claim 1, wherein the diameter of the portion with an increasing diameter increases substantially linearly, the surface of the portion with a decreasing diameter is formed with a substantially arc-shaped, rotationally curved surface and the surface of the anode in the transition area between the portion with the increasing diameter and the portion with a decreasing diameter is formed with a substantially arc-shaped, rotationally curved surface.

6. The xenon lamp as claimed in claim 1, wherein the portion with an increasing diameter is formed with a substantially arc-shaped, rotationally curved surface and the diameter of the portion with a decreasing diameter decreases substantially linearly.

7. The xenon lamp as claimed in claim 1, wherein the portion with a decreasing diameter adjoins a portion of the anode having a uniform diameter.

8. The xenon lamp as claimed in claim 7, wherein the portion with a decreasing diameter adjoins the portion with a uniform diameter at the back end of the anode.

9. The xenon lamp as claimed in claim 7, wherein the portion with the uniform diameter adjoins the portion with a decreasing diameter at the portion with a maximum diameter.

10. The xenon lamp as claimed claim 1, wherein the length in the axial direction of the portion with the decreasing diameter is greater than or equal to one half of the total length of the anode.